

AMENDMENTS TO THE CLAIMS

1. (Canceled).
2. (Canceled).
3. (Canceled).
4. (Canceled).
5. (Canceled).
6. (Canceled).
7. (Canceled).
8. (Canceled).
9. (Canceled).
10. (Canceled).
11. (Currently Amended) A system for processing a biomaterial stream comprising a ~~biomaterial source in communication with a heater comprising a spiral-shaped element disposed in at least one heater tube~~ heat exchanger including a heater tube wherein the heater tube forms a heating element for heating the biomaterial stream as the biomaterial stream is conveyed through the heater tube; and a spiral-shaped element extending through a substantial portion of the heater tube and configured to cause a substantial portion of the biomaterial stream to move in a generally spiral path through the heater tube, and wherein the heater tube heats the biomaterial stream moving in the spiral path through the heater tube.
12. (Original) The system as set forth in claim 11, wherein the spiral-shaped element has a width spanning less than about 50% of an inside diameter of the heater tube.
13. (Original) The system as set forth in claim 11, wherein the biomaterial source comprises a grain processing facility.

14. (Original) The system as set forth in claim 13, wherein the grain processing facility comprises at least one of grain handling, fermentation, distillation and dehydration unit operations.
15. (Canceled).
16. (Canceled).
17. (Canceled).
18. (Canceled).
19. (Canceled).
20. (Canceled).
21. (Canceled).
22. (Canceled).
23. (Canceled).
24. (Canceled).
25. (New) The system of claim 11 wherein the spiral shaped element extends adjacent an interior portion of the heater tube and is configured to leave an unobstructed central opening through the heater tube interiorly of the spiral shaped element.
26. (New) The system of claim 25 wherein the spiral shaped element assumes a generally ribbon configuration throughout a portion of the heater tube.
27. (New) The system of claim 11 including a transfer unit for delivering the biomaterial stream to the heat exchanger.
28. (New) The system of claim 11 wherein the spiral shaped element includes at least two regions with each region having a different pitch density.
29. (New) The system of claim 11 wherein the spiral shaped element includes an aspect ratio of about 5-20.

30. (New) The system of claim 26 wherein the spiral shaped element includes a twist of at least one rotation.
31. (New) The system of claim 11 including a grain steeping unit operation; a grinding unit operation downstream of the grain steeping unit operation; a germ separation unit operation downstream of the grinding unit operation; filtration and washing unit operations receiving material from the germ separation unit operation; and wherein the heat exchanger is operative to receive a heavy steep stream from the grain steeping unit operation.
32. (New) The system of claim 11 including a grain handling unit operation; a grain fermentation unit operation in communication with the grain handling unit operation; a distillation unit operation in communication with the fermentation unit operation; an evaporation unit operation in communication with the distillation unit operation; and a concentrator in communication with the evaporation unit operation, and wherein the concentrator includes the heater tube and spiral shaped element extending through a portion of the heater tube.
33. (New) The system of claim 11 wherein the spiral shaped element is fixed relative to the heater tube.
34. (New) The system of claim 33 wherein the spiral shaped element winds around an interior wall of the heater tube and is disposed outwardly of a central opening that extends through the heater tube.
35. (New) The system of claim 11 wherein the heat exchanger includes an outer shell that defines a heating medium chamber between the shell and the heater tube; and wherein the heating element is heated by a heating medium in chamber.
36. (New) The system of claim 35 wherein the spiral shaped element is fixed relative to the heater tube.

37. (New) The system of claim 36 wherein the spiral shaped element winds around an interior wall of the heater tube and is disposed outwardly of a central opening that extends through the heater tube.